

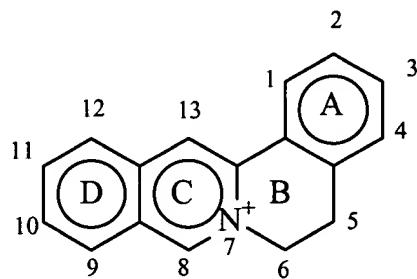
new claims 45-55 have been added. Therefore, claims 10-17, 22, 34-35, 38-39 and 45-54 are pending.

Restriction Requirement

Applicant affirms the election of Group I.

Claims 10, 11, 15, 22, 35, 35 and 39 were rejected under 35 U.S.C. 102(b) as anticipated by Manohar L. Sethi, J. Pharm. Sciences, Vol. 72, No. 5, May 1983 (hereinafter "Sethi"). This rejection is respectfully traversed.

Sethi discloses five specific compounds (I-V) having the following ring system,



which is numbered and labeled as in Sethi. Compounds I-V are substituted with specific groups at the 9-position or the 13-position. The instant claims do not recite compounds similarly substituted at the 9-position or the 13-position. Additionally, compounds I-V are substituted with specific groups at both the 2-position and the 3-position. The instant claims do not recite compounds that are substituted at both the 2- and 3-positions. Thus, the instant claims are not anticipated by Sethi, and withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

Claims 10-17, 22, 34, 35, 38 and 39 are rejected under 35 U.S.C. 103(a) over Sethi. The rejection is respectfully traversed.

Sethi discloses compounds I-V, as well as biological data for the compounds in a reverse transcriptase assay. Sethi also discloses that compounds I-V display antitumor activity against experimental tumors but did not show antileukemic activity against P-388 lymphocytic leukemia in mice (citing other work, see Sethi at page 540, last paragraph).

The Examiner has not established a *prima facie* case of obviousness.

The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. M.P.E.P. § 2142. To establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all of the claim limitations. M.P.E.P. §2142.

One skilled in the art would not be motivated to modify the Sethi compounds in the manner necessary to arrive at the structurally distinct compounds recited by the instant claims. Each of compounds I-V is substituted with specific groups at the 9-position or the 13-position. Additionally, each of compounds I-V is substituted with specific groups at both the 2-position and the 3-position. Thus, the compounds disclosed by Sethi differ structurally from the compounds recited by the instant claims in at least two ways. The Examiner has not identified any motivation for one skilled in the art to modify compounds I-V and prepare the structurally distinct compounds recited by the instant claims.

Additionally, one skilled in the art would not have a reasonable expectation that the compounds of Sethi would have any useful activity if modified in the manner necessary to arrive at the compounds recited by the instant claims. In the specification at page 9, lines 14-26, it is disclosed that “minor structural variations amoung analogs of coralyn can have a profound impact on their activity....” Sethi also discloses that minor structural changes in compounds I-V cause substantial variation in reverse transcriptase activity (please see Sethi at page 540, column 2). Additionally, at page 540, beginning 17 lines from the bottom, Sethi discloses “the placing of methoxyl groups at positions 2 and 3 of ring A, regardless of such groups at positions 9 and 10 or 10 and 11 of ring D, was an essential requirement in possessing the inhibitory effect of the alkaloids.” Thus, Sethi discloses the importance of methoxyl substitution at positions 2 and 3. The compounds recited by the instant claims are not substituted at both the 2 and 3 positions. In light of the fact that Sathi discloses the importance of specific substituents at the 2- and 3-position, one skilled in the art would not have reasonably assumed that the compounds recited by the claims would have any useful activity.

At page 5 of the Office Action, the Examiner states that a person skilled in the art would be motivated to substitute a lower alkyl group or a methoxy group at the 4- and 8-positions of Sethi to provide the compounds of the claimed invention. As discussed above, one skilled in the art would not reasonably assume that the Sethi compounds would have any useful activity if significantly modified. Additionally, modifying one of compounds I-V in the manner described by the Examiner would not yield one of the compounds recited by the instant claims, since compounds I-V are also substituted at either the 9-position or the 13-position.

Thus, none of the three criteria required to support a *prima facie* case of obviousness have been met. Accordingly, the Examiner is respectfully requested to withdraw the rejection under 35 U.S.C. §103(a).

Claim 23 was objected to as being dependent upon a rejected base claim.

Claims 23 has been rewritten as new claim 45, which is believed to be in condition for allowance.

AMENDMENT AND RESPONSE

Serial Number: 09/117,558

Filing Date: July 31, 1998

Title: CORALYNE ANALOGS AS TOPOISOMERASE INHIBITORS

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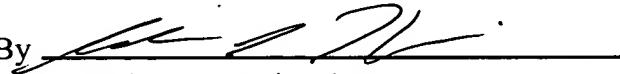
In light of the above amendments and remarks, Applicant believes that claim 10-17, 22, 34-35, 38-39 and 45-55 are in condition for allowance, and request reconsideration of the rejections and objections, and allowance of the claims. The Examiner is invited to telephone the below-signed attorney at 612-359-3265 to discuss any questions which may remain with respect to the present application.

Respectfully submitted,

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By their Representatives,

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Date 28 July 1999 By 
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Assistant Commissioner of Patents, Washington, D.C. 20231 on July 29, 1999.

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Signature